

Initial	Date
CMC	2/24/14
VJ	2/20/2014

BA WTR  
BA SD  
Mail Stop 60189

FEB 24 2014

# Memorandum

To: Project Leader, Lake Andes National Wildlife Refuge

From: Chief, Division of Water Resources

Subject: 2013-2014 Water Use Report/Management Plan

The subject reports for Lake Andes National Wildlife Refuge and Varilek, Sherman, Broken Arrow, and Roth Wildlife Production Areas have been reviewed and approved.

Upon review, we noted the damage that occurred in 2009 at Lake Andes NWR. Once funding is secured and there are plans available to move forward to repair/replace the structures; please advise Water Resources Division prior to construction so that we can evaluate the water right implications.

Again, we acknowledge that the Owens Bay Well will be replaced in the future. Please contact Carrie Cordova of my staff a few months prior because a permit will have to be obtained from the State of South Dakota before construction can begin.

Attached is the signed approval page for your files. Thank you for submitting the report in a timely manner.

**S/ MEGAN ESTEP**

Attachment

bcc: WTR rf

WTR:VJiron:vj:02/24/2014  
I:\WATERUSE\SD\LAKE ANDES\wateruse\_13.doc



LAKE ANDES NATIONAL WILDLIFE REFUGE  
COMPLEX

ANNUAL WATER MANAGEMENT PLAN  
2013 WATER USE REPORT  
2014 MANAGEMENT PLAN

Prepared by: Mick Hanan

Date: 1/24/2014

Submitted: Michael D. Bryan  
Project Leader

Date: 1/29/2014

Approved: Bernard P. Petersen  
Regional Refuge Supervisor

Date: 1-30-2014

Concur: [Signature]  
Chief, Water Resources Division

Date: 2/24/2014

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -  
REPORT YEAR: 2013

STATION NAME: Lake Andes NWR

MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 220-3 (Owens Bay Well)

PRIORITY DATE: 7/6/1956

SOURCE: Dakota Sandstone artesian aquifer

WATER DIVERTED: YES X

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: artesian well

AF STORAGE: N/A

RATE OF DIVERSION: (see below)

AF SEASONAL: N/A

WELLS: YES X NO

FREE FLOWING: 2.22 CFS

or PUMPED: N/A GPM

TYPE OF USE: Fish & Wildlife: X

Domestic:

Crop Irrigation:

Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 8/05/2013

INSPECTED BY: Mick Hanan

CONDITIONS AT INSPECTION: diminishing flow from well

AF STORAGE: N/A

OR ESTIMATED ELEVATION: N/A

WELLS: FREE FLOWING: 0.46 CFS (207 GPM)

OR PUMPED: N/A GPM

CONDITION OF FACILITIES: Diminished flow and a deteriorating well casing will require replacement of this well in the future.

OVERALL CLIMACTIC CONDITIONS: Drought.

PROPOSED WATER PROGRAM: previous attempts to reduce flow at wellhead have caused leaking around well casing. Active management is extremely limited. Lack of proper drainage, due to high elevation, between drain structure and wetland does not allow for active management to drain wetland, forced to rely on natural evaporation.

Refuge staff is meeting with Ducks Unlimited and other partners to discuss the possibility of gathering funds to implement a plan for increasing active management potential for wetlands within the Owen's Bay portion of Lake Andes NWR to improve management capabilities to a level that would provide for desired aquatic vegetation growth, which in turn would improve habitat suitability for wetland species.

COMMENTS: This is a free-flowing artesian well.

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -  
REPORT YEAR: 2013

STATION NAME: Lake Andes NWR

MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 517-3 (Lake Andes)

PRIORITY DATE: 4/22/1940

SOURCE: Andes Creek, Garden Valley Creek, other tributaries

WATER DIVERTED: YES NO X (no longer)

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: N/A

AF STORAGE: 13,721 AF

RATE OF DIVERSION: N/A

AF SEASONAL: 6,813 AF

WELLS: YES NO X FREE FLOWING: N/A

or PUMPED: N/A GPM

TYPE OF USE: Fish & Wildlife: X

Domestic:

Crop Irrigation:

Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 8/5/2013

INSPECTED BY: Steve Spawn

CONDITIONS AT INSPECTION: Lake level was at 1434.5 (1.65' below full pool)

AF STORAGE: <20,634 AF

OR ESTIMATED ELEVATION: 1439.25 amsl

WELLS: FREE FLOWING: N/A GPM

OR PUMPED: N/A GPM

CONDITION OF FACILITIES: Dikes crossing Lake Andes (2) were damaged by high water in 2011. Considerable emergency repair was completed by the refuge staff; however funds are needed to restore them to their pre-flood condition.

Water control structures (WCS) were replaced during 2008. New box culverts were installed in the North and South dikes that are considerably deeper than the previous ones constructed in 1940. Plastic lumber stoplogs were used for the first time in 2009. Ice damaged the new WCS on the South dike in early 2009, requiring removal of the stoplogs at and above the waterline. Repair of the damaged structure was planned for 2013 but was not completed due to a lack of funds. This should be planned in the future when funds come available.

OVERALL CLIMATIC CONDITIONS: Drought. Lake elevation was below full pool through the year.

PROPOSED WATER PROGRAM: No active management planned.

Refuge staff is meeting with Ducks Unlimited and other partners to discuss the possibility of gathering funds to implement a plan for increasing active management potential for Lake Andes to improve water quality and aquatic

vegetation growth, which in turn would improve habitat suitability for wetland species.

COMMENTS: Full pool equals 1437.25'.

Water Resources examined the potential of the Garden Creek diversion during 2007. The diversion was decommissioned ~50 years ago. Hydrologist Mark Rodney determined that if the diversion were recommissioned it had the potential to contribute ~168 AF of water to Lake Andes in a normal year. This equates to .04' of elevation gain over the entire lake and therefore it was determined that it was not necessary to recommission the diversion. The Charles Mix County Lake Restoration Organization, a local non-profit group, has taken on the challenge of improving water quality in the Lake Andes watershed. Volunteers collected basic water quality measurements on Lake Andes each month.

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -  
REPORT YEAR: 2013

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 5250-3 (Varilek WPA)

PRIORITY DATE: 12/27/1988

SOURCE: a natural slough on Varilek WPA and private land

WATER DIVERTED: YES NO X

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: N/A

AF STORAGE: 139 AF

RATE OF DIVERSION: N/A

AF SEASONAL: N/A

WELLS: YES NO X FREE FLOWING: N/A

GPM or PUMPED: N/A

TYPE OF USE: Fish & Wildlife: X

Domestic:

Crop Irrigation:

Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 8/5/2013

INSPECTED BY: Mick Hanan

CONDITIONS AT INSPECTION: low water level

AF STORAGE: <139 AF

OR ESTIMATED ELEVATION: <1614' amsl

WELLS: FREE FLOWING: N/A GPM

OR PUMPED: N/A GPM

CONDITION OF FACILITIES: N/A

OVERALL CLIMATIC CONDITIONS: Drought.

PROPOSED WATER PROGRAM: no active management

COMMENTS:

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* -  
REPORT YEAR: 2013

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 5251-3 (Sherman WPA)

PRIORITY DATE: 12/27/1988

SOURCE: a natural slough on **Sherman WPA**

WATER DIVERTED: YES NO X

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: N/A

AF STORAGE: 271 AF

RATE OF DIVERSION: N/A

AF SEASONAL: N/A

WELLS: YES NO X FREE FLOWING: N/A

or PUMPED: N/A GPM

TYPE OF USE: Fish & Wildlife: X

Domestic:

Crop Irrigation:

Stock:

Other:

INSPECTION DATA

*Please complete all pertinent information for ACTUAL use versus the Water Rights data.*

DATE OF INSPECTION: 8/5/2013

INSPECTED BY: Mick Hanan

CONDITIONS AT INSPECTION: high water level

AF STORAGE: <271 AF

OR ESTIMATED ELEVATION: <1591.7' amsl

WELLS: FREE FLOWING: N/A GPM

OR PUMPED: N/A GPM

CONDITION OF FACILITIES: N/A

OVERALL CLIMACTIC CONDITIONS: Exceptional drought

PROPOSED WATER PROGRAM: no active management

COMMENTS:

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -  
REPORT YEAR: 2013

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 5077-3 (Broken Arrow WPA)

PRIORITY DATE: 10/7/1985

SOURCE: Joubert Drain

WATER DIVERTED: YES X NO

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: Dam #7 (DU Dam)

AF STORAGE: 131.2 AF

RATE OF DIVERSION: unknown

AF SEASONAL: N/A

WELLS: YES NO X FREE FLOWING: N/A

or PUMPED: N/A GPM

TYPE OF USE: Fish & Wildlife: X

Domestic:

Crop Irrigation:

Stock:

Other: Recreation X

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 8/5/2013

INSPECTED BY: Mick Hanan

CONDITIONS AT INSPECTION: low water levels

AF STORAGE: <131.2 AF

OR ESTIMATED ELEVATION: unknown

WELLS: FREE FLOWING: N/A GPM

OR PUMPED: N/A GPM

CONDITION OF FACILITIES: some water control structures and the Platte Creek road crossing were damaged by high water. Repairs were made in 2011 and 2012.

OVERALL CLIMATIC CONDITIONS: Drought. The pond behind Dam #7 was low for much of the year.

PROPOSED WATER PROGRAM: Management will retain as much water as possible.

COMMENTS: Joubert Drain also known as New Holland Drain. Dam and impoundment was inspected (Safety inspection) by a contractor in 2011.

# WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -

REPORT YEAR: 2013

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWRC

## WATER RIGHTS DATA

WATER RIGHT NO: 6013-3 (Roth WPA)

PRIORITY DATE: 7/30/1997

SOURCE: tributary of Dry Creek

WATER DIVERTED: YES X NO

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: ditch plug in tributary

AF STORAGE: 323 AF

RATE OF DIVERSION: unknown

AF SEASONAL: 212 AF

WELLS: YES NO X FREE FLOWING: N/A

or PUMPED: N/A GPM

TYPE OF USE: Fish & Wildlife: X

Domestic: X

Crop Irrigation:

Stock:

Other:

## INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 8/5/2013

INSPECTED BY: Mark Heisinger

CONDITIONS AT INSPECTION: low water level

AF STORAGE: <323 AF

OR ESTIMATED ELEVATION: <1398.5' amsl

WELLS: FREE FLOWING: N/A GPM

OR PUMPED: N/A GPM

CONDITION OF FACILITIES: good

OVERALL CLIMATIC CONDITIONS: Drought

PROPOSED WATER PROGRAM: no active management planned

COMMENTS: In the fall of 2010 we received a complaint from the adjoining landowner to the south (Lance Konrad) that the plug on Roth WPA was causing a significant amount of cropland to be inundated with water especially the last few years. He stated that when the plug was installed the USFWS assured his grandfather that we would remove the plug if there were any issues. Nothing has changed since the plug was constructed in 1997. I inspected their field and will suggest to them to remove some rocks in a crossing on their property which is likely holding water on their property. MJH



Jiron, Valerie &lt;valerie\_jiron@fws.gov&gt;

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**Water Use Report question**

3 messages

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**Jiron, Valerie** <valerie\_jiron@fws.gov>  
To: Mick Hanan <mick\_hanan@fws.gov>

Thu, Feb 20, 2014 at 10:05 AM

Good Morning Mick,

Well reviewing the Lake Andes water use report I came across a potential error in our database. For some reason under water right no. 517-3 (Lake Andes), our database states the ditch has been plugged for many years but the report says the water control structures have been replaced.

I guess I'm just seeking confirmation from you that the system is up and working other than the damage on South dike that occurred in 2009.

I'll be away from my desk until 1 pm, but feel free to call with any questions.

Thanks for your help,

Val

—  
Valerie Jiron  
U.S. Fish & Wildlife Service  
Division of Water Resources  
P.O. 25486, DFC  
Denver, CO 80225  
303.236.4490

\*Be the change that you wish to see in the world. ~Gandhi

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**Hanan, Mick** <mick\_hanan@fws.gov>  
To: "Jiron, Valerie" <valerie\_jiron@fws.gov>

Thu, Feb 20, 2014 at 10:17 AM

Hi Val,

I might not have clearly written what I intended. I was trying to write the report with information from past reports and other staff members. The structures I refer to within the portion of the report for water right no. 517-3 are along the north and south dikes and not on the along Andes Creek, Garden Valley Creek, or other tributaries.

The Garden Creek diversion has not been recommisioned. It was found that it would not add much to the lake level. Therefore, the WCS in the south dike is still damaged and the plug was not removed from the ditch.

I hope that helps. Let me know if there is anything I can do.

Thanks,

Mick

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Mick Hanan  
U.S. Fish and Wildlife Service  
Lake Andes NWR Complex  
38672 291st St.  
Lake Andes, SD 57356  
Phone - (605) 487-7603

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**Jiron, Valerie** <valerie\_jiron@fws.gov>  
To: "Hanan, Mick" <mick\_hanan@fws.gov>

Thu, Feb 20, 2014 at 12:07 PM

Thanks Mick! This is perfect! I'll update our database so the specifics are included. This is my first year reviewing the reports so I'm learning a lot of history along the way!

Val

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